

Notice of Allowability

Application No.

10/689,029

Examiner

Thomas D. Alunkal

Applicant(s)

SAKAGAMI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment-After-Non-Final Rejection filed 1/3/07.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

Allowable Subject Matter

Claims 1-13 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art (see cited references) taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, 1,6,11, and 12, in such a manner that a rejection under 35. U.S.C 102 or 103 would be proper. Regarding claim 1, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a multi-level data processing method for converting a binary data into a multi-level data having n bits per symbol, where n is an integer satisfying n is greater than or equal to 2, comprising arranging a $\{(n - 1) \times m\}$ -bit binary data in upper $(n - 1)$ bits of multi-level data of m symbols, where m is an integer satisfying m is greater than or equal to 2, and converting a $(m - k)$ -bit binary data into m bits according to a predetermined conversion rule and arranging the m bits in a lower 1 bit of the multi-level data of m symbols, where k is an integer satisfying $m > k$ is greater than or equal to 1, so as to convert a $(n \times m - k)$ -bit binary data into 1 set of multi-level data made up of m symbols. Regarding claim 6, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a multi-level data processing apparatus for converting a binary data into a multi-level data having n bits per symbol, where n is an integer satisfying n is greater than or equal to 2, comprising means for arranging a $\{(n - 1) \times m\}$ -bit binary data in

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upper $(n - 1)$ bits of multi-level data of m symbols, where m is an integer satisfying m is greater than or equal to 2, and means for converting a $(m - k)$ -bit binary data into m bits according to a predetermined conversion rule and arranging the m bits in a lower 1 bit of the multi-level data of m symbols, where k is an integer satisfying $m > k$ is greater than or equal to 1, so as to convert a $(n \times m - k)$ -bit binary data into 1 set of multi-level data made up of m symbols. Regarding claim 11, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a multi-level data processing apparatus for converting a binary data into a multi-level data having n bits per symbol, where n is an integer satisfying n is greater than or equal to 2, comprising a section to arrange a $\{(n - 1) \times m\}$ -bit binary data in upper $(n - 1)$ bits of multi-level data of m symbols, where m is an integer satisfying m is greater than or equal to 2, and a section to convert a $(m - k)$ -bit binary data into m bits according to a predetermined conversion rule and arranging the m bits in a lower 1 bit of the multi-level data of m symbols, where k is an integer satisfying $m > k$ is greater than or equal to 1, so as to convert a $(n \times m - k)$ -bit binary data into 1 set of multi-level data made up of m symbols. Regarding claim 12, the prior art taken either singularly or in combination fails to anticipate or fairly suggest a multi-level data processing apparatus for converting a binary data into a multi-level data having n bits per symbol to be recorded on an information recording medium, where n is an integer satisfying n is greater than or equal to 2, comprising a section to arrange a $\{(n - 1) \times m\}$ -bit binary data in upper $(n - 1)$ bits of multi-level data of m symbols, where m is an integer satisfying m is greater than or equal to 2, and a section to convert a $(m - k)$ -bit binary data into m bits according to a predetermined conversion rule and

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arranging the m bits in a lower 1 bit of the multi-level data of m symbols, where k is an integer satisfying $m > k$ is greater than or equal to 1, so as to convert a $(n \times m - k)$ -bit binary data into 1 set of multi-level data made up of m symbols, and a section to mix to the multi-level data made up of the m symbols a test data which includes $2^{(M \times n)}$ combinations of M consecutive multi-level data, where M is an integer satisfying M is greater than or equal to 3, to be recorded on the information recording medium.

Dependent claims 2-5, 7-10, and 13, are allowed with their respective base claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Thomas Alunkal


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER